REMARKS

Applicants appreciate the Examiner's thorough examination of the subject application and request reconsideration of the subject application based on the foregoing amendments and the following remarks.

Claims 1-20 are pending in the subject application.

Claims 1-20 stand rejected under 35 U.S.C. §103 and/or 35 U.S.C. §112, second paragraph. The Examiner did indicate that claims 2, 4, 6, 8, 10, 12, 14, 16, 18, 19/2, 19/4, 20/14 and 20/16 would be allowable if the 35 U.S.C. §112 rejections as to claims 2, 8 and 14 were overcome.

Claims 7, 8, 13 and 14 were amended to only address the Examiner's non-art based rejections. For consistency of language, claims 9-12 and 15-18 were similarly amended so there would be consistency of language and terminology amongst the claims.

The amendments to the claims are supported by the originally filed disclosure.

35 U.S.C. §112, SECOND PARAGRAPH REJECTIONS

Claims 1, 2, 7, 8, 13 and 14 stand rejected under 35 U.S.C. §112 on the grounds that there are antecedent basis, indefiniteness and/or vagueness concerns with the identified claims. The Office Action further provides that the claims stand rejected because the metes and bounds of claim 1 is not clear when the limitations of claims 7 and 14 are introduced and a similarly based rejected is raised in connection with claims 2, 8 and 14.

As provided above, claims 7, 8, 13 and 14 were amended to address the non-art concerns specifically identified by the Examiner. Specifically, claims 7 and 8 were amended so as to provide that *said power control means further includes* reproduction condition control means. As to claims 13 and 14, each of these claims were amended so as to provide that the reproduction condition control means *further* controls the reproducing power of the light beam so that the measured amplitude ratio gets close to a target value. Applicants thus believe that the areas of rejection as to all of the identified claims have been identified and addressed in the foregoing amendments.

Accordingly, it is respectfully submitted that claims 1, 2, 7, 8, 13 and 14 satisfy the requirements of 35 U.S.C. §112 and, as such, are allowable.

35 U.S.C. §103 REJECTIONS

Claims 1, 2, 5, 7, 9, 11, 13, 15, 17, 19/1, 19/3, 19/5, 20/13, and 20/15 stand rejected under 35 U.S.C. §103 as being unpatentable over the cited prior art for the reasons provided on pages 3-6 of the above-referenced Office Action. Applicants respectfully traverse.

It should be noted that on page 6 of the Office Action it is provided that claim 2 would be allowable if the §112 problems with respect to claims 2, 8 and 14 were overcome. As there are no grounds for rejection under §103 as to claim 2 set forth in the Office Action, Applicants understand that the claims being rejected under §103 do NOT include claim 2. Thus, Applicants have not addressed claim 2 further herein as to §103. If this is incorrect, then Applicants respectfully submit that the above-referenced Office Action is incomplete, at least as to claim 2.

Because claims were amended in the foregoing amendment, the following discussion refers to the language of the amended claim(s). However, only those amended features specifically relied on in the following discussion shall be considered as being made to overcome the prior art reference. The following addresses the specific rejections provided in the above-referenced Office Action.

CLAIMS 1, 5, 7, 9, 11, 13, 15 & 17

Claims 1, 5, 7, 9, 11, 13, 15 and 17 stand rejected under 35 U.S.C. §103 as being unpatentable over Applicants Admitted Prior Art (AAPA) in view of Tanaka et al. [USp 5,825,742; "Tanaka"] and both further considered in view of Okumura at el. [USP 6,288,992; "Okumura `992"] for the reasons provided on pages 3-5 of the above-referenced Office Action. As indicated above, Applicants understand that claim 2 is not rejected under §103 and thus is not considered further herein. Applicants respectfully traverse as discussed below.

As previously indicated by Applicants in regards to AAPA, the discussion on page 5, lines 7-16 of the subject application provides that sector 300, which is one unit of a recording

area in the magneto-optical disk 220, includes a reproducing power control area 302 for recording reproducing power control marks. In contrast, the claimed optical reproducing device is used for a recording medium that does not need a separate reproducing power control area. Instead, the claimed optical reproducing device detects a specific pattern including a short mark and a specific pattern including a long mark from a bit arrangement pattern of information data that is recorded in the recording medium.

Therefore, AAPA fails to teach or suggest a number of features of claim 1; namely (a) pattern detection means included for detecting a specific pattern including therein an arrangement of a plurality of short reproducing power control marks from amongst a bit arrangement pattern of the information data in the data recording area, and (b) when the specific pattern is detected, the reproducing signal characteristic of short reproducing power control marks is measured, and the measured reproduction signal characteristic corresponds only to the plurality of short reproducing power control marks included in the specific pattern. Applicants submit that one skilled in the art would have considered AAPA as teaching away from the claimed invention.

The Office Action at pages 4-5 thereof, asserts that Okamura `992 when describing the operation of figures 9 and 10 (starting at col. 11, line 16 and continuing till col. 14, line 41), the ability of placing/having the long and short reproducing marks in the data recording area of a sector of an optical recording medium is well known. This assertion is incorrect and not supported when the discussion regarding figures 9 and 10 are read in connection with the discussion regarding figures 2-3 of Okamura `992.

As can be seen form the following excerpts from Okamura as well as reference to figures 2-3 thereof, as previously indicated by Applicants the long and short control marks of each sector 22 are recorded respectively in a long mark recording domain 24 and a short mark recording domain 23 which are clearly separate and apart from the data recording domain 25 area. Therefore it is impossible for Okamura `992 to teach that placing/having the long and short reproducing marks in the data recording area of a sector of an optical recording medium is well known. Instead, Okamura `992 teaches the well known technique described in the subject

application of placing reproducing power control marks in an area that is separate and apart for the area in which data is recorded.

> FIG. 9 is an explanatory drawing showing sampling by an A/D converter of an analog reproducing signal obtained from a short mark recording domain of the magneto-optical disk shown in FIG. 2.
>
> FIG. 10 is an explanatory drawing showing sampling by an A/D converter of an analog reproducing signal obtained from a long mark recording domain of the magneto-optical disk shown in FIG. 2.
>
> see col. 6, lines 21-28
>
> ******
>
> Prior to explaining the structure of the present reproducing device, the structure of the magneto-optical disk 1 will first be explained. In the magneto-optical disk 1 various data is recorded by (1,7)RLL (Run Length Limited) modulation. FIG. 2 is an explanatory drawing showing the structure of the magneto-optical disk 1. As shown in the Figure, a recording track 21 is formed in the shape of a circular band concentric with the circular magneto-optical disk 1. Further, in the recording track 21 are successively formed a plurality of sectors 22.
>
> FIG. 3 is an explanatory drawing showing the structure of a sector 22. As shown in the Figure, in each sector 22 are formed a short mark recording domain 23, a long mark recording domain 24, and a data recording domain 25.
>
> The short mark recording domains 23 (reproducing power control domains) are domains in which are formed short marks, which are marks for reproducing power control. The long mark recording domains 24 (reproducing power control domains) are domains in which are formed long marks, which are also marks for reproducing power control. The data recording domains 25 are domains in which the user's desired data, modulated by (1,7)RLL, is recorded as digital data.
>
> see col. 8, lines 13-34

The Office Action assets that Tanaka teaches the limitations set forth in the last clause of claim. Applicants respectfully disagree with the assertion and applicability of the teachings in Tanaka to the claimed invention.

Tanaka describes a method for recording information into a optical recording medium that is capable of reducing the edge shit and jitter by irradiating the optical recording medium with a light beam pulse emission in five power values, when forming recording marks and spaces of small dimensions (see generally Abstract). In this regard, it should be noted that the

information recording method in Tanaka more particularly uses a mark edge recording system onto a magneto-optical recording medium. In a mark edge recording system, embodies a recording methodology in which "1" of binary information data corresponds to the edge of a recording mark. In this system, information can be recorded at higher density as compared with a mark position recording system in which the recording mark corresponds to "1" of binary information data. Binary information data as described in Tanaka does not correspond to a short or long reproducing power control mark.

As can be seen form the following excerpts from Tanaka, the discussion referred to in the Office Action in Tanaka relates to the testing program that was utilized to measure or evaluate edge shift and jitter of marks recorded using the recording systems and recording methods described in Tanaka. In other words, the marks corresponding to binary information data were recorded in the magneto-optical recording medium so that one could assess the effectiveness of the recording methodology and systems described in Tanaka. This does not correspond in any way to a technique used to control reproducing power.

> Thus, in the recording system of the first embodiment, the power value of laser beam is modulated into four values of Pw1, Pw2, Paw, Pb when forming the recording mark, and modulated into two values of Pae and Pb when forming the space, and hence information is recorded in the magneto-optical disk D by using a total of five power values.
>
> The edge shift and jitter of the recording mark thus formed according to this recording system were measured. To evaluate the edge shift, the shift amount of the edge was measured in the recording mark formed in the pattern-shift pattern and in the recording mark formed in the thermal-shift pattern, respectively. FIG. 9 and FIG. 10 are diagrams showing the recording mark length and space interval for measuring the pattern-shift and thermal-shift, respectively. As shown in FIG. 9, in the pattern-shift pattern, the recording mark length is varied under keeping the space interval constant. In this pattern, effects of the heat on the rear edge of the recording mark when forming the recording mark can be evaluated. As shown in FIG. 10, in the thermal-shift pattern, the space interval is varied under keeping the recording mark length constant. In this pattern, effects of preheat in space interval onto the front edge of next recording mark can be known.
>
> Employing the recording method of the first embodiment, recording marks were formed in both pattern-shift pattern and thermal-shift pattern, and

both pattern-shift and thermal-shift were measured. FIG. 11 is a graph showing results of measurement of shift of recording mark. The axis of ordinates represents the shift (%), and the axis of abscissas denotes the recording pattern length (XT). To evaluate the shift (%) of pattern-shift pattern, the time according to the length of formed recording mark is measured by using a time interval analyzer, and the rate of time difference of recording mark of each length is computed on the basis of the time of the shortest recording mark (2T in the case of (1,7)RLL modulation code). To evaluate the shift (%) of thermal-shift pattern, similarly, the time according to the length of the space is measured, and the rate of time difference of space of each length is computed on the basis of the time of the longest space (8T in the case of (1,7)RLL modulation code). As is known from FIG. 11, the range of pattern-shift is .+-.2.5% and the range of thermal-shift is .+-.4%.

Moreover, employing the recording method of the first embodiment, the recording mark was formed by random pattern (a mixed pattern of pattern-shift pattern and thermal-shift pattern), and the recording power margin was determined from the measured jitter (%). FIG. 12 is a graph showing the result of determining the recording power margin. The axis of ordinates indicates the jitter (%), and the axis of abscissas shows the power value Pw1. Herein, jitter of 10% or less is regarded as recording power margin. As is known from FIG. 12, the recording power margin is .+-.15.0%. The jitter is calculated as the standard deviation of time deviation of edge of recording mark and edge of reference clock, and this shows the rate to the reference clock. The jitter of each power value Pw1 shown in FIG. 12 shows the most favorable value of the jitter values computed by differing the power value Pw2 relative to each power value Pw1.
see col. 9. lines 8-65

In any event, the recording marks in Tanaka are those that are arguably provided for recording binary information data and are not reproducing power control marks. It also is clear from the foregoing that the pattern of recording marks in Tanaka, as admitted by the Examiner is established for testing edge shift and jitter, and not for purposes of controlling reproducing power. Therefore, one skilled in the art, would not have considered using a testing pattern or a testing technique for purposes of creating power reproducing marks along with binary information data,

There also is no discussion anywhere in Tanaka of detecting a specific pattern of marks corresponding to reproducing power control marks from the bit arrangement pattern of the

information data that also is recorded in the data recording area. While Tanaka admits that data was recorded in specific patterns for purposes of evaluating an measuring edge shift and jitter of the marks recorded in the magneto-optical recording medium, there is no discussion anywhere in Tanaka that the testing methodology searches out for a particular pattern.

There also is no discussion anywhere in Tanaka describing or teaching that when the specific pattern is detected, to measure the reproduction signal characteristic of the short reproducing power control marks, the measured reproduction signal characteristic of short reproducing power control marks corresponding only to the plurality of short reproducing power control marks included in the specific pattern. In Tanaka the signal characteristics for all of the recording marks recorded in the magneto-optical recording medium are evaluated and measured.

In sum, Tanaka does not describe teach or suggest, the claimed feature, namely that "the predetermined length mark signal measurement means further includes a pattern detection means for detecting a specific pattern including therein an arrangement of a plurality of short reproducing power control marks from amongst a bit arrangement pattern of the information data in the data recording area, and when the specific pattern is detected, to measure the reproduction signal characteristic of short reproducing power control marks, the measured reproduction signal characteristic of short reproducing power control marks corresponding only to the plurality of short reproducing power control marks included in the specific pattern."

It is respectfully submitted that AAPA, Tanaka and Okamura `992, alone or in combination, do not describe, teach or suggest the optical reproducing device of claim 1. It also is respectfully submitted that there is no teaching or suggestion in any of the references to modify the optical reproducing device of AAPA in the fashion described in the Office Action so as to yield the optical reproducing device of claim 1.

As to claims 5, 7, 9, 11, 13, 15 and 17, each of these claims depends (directly or ultimately) from claim 1. Thus, each of claims 5, 7, 9, 11, 13, 15 and 17 are considered to be allowable at least because of the dependency from an allowed base claim. This shall not be construed, however, as an admission that claims 5, 7, 9, 11, 13, 15 and 17 are not separately patentable from the cited art.

It is respectfully submitted that claims 1, 5, 7, 9, 11, 13, 15 and 17 are patentable over the cited reference(s) for the foregoing reasons.

CLAIMS 19/1, 19/3, 19/5, 20/13, & 20/15

Claims 19/1, 19/3, 19/5, 20/13, and 20/15 stand rejected under 35 U.S.C. §103 as being unpatentable over Applicants Admitted Prior Art (AAPA) in view of Tanaka et al. [USp 5,825,742; "Tanaka"] in view of Okumura et al. [USP 6,288,992; "Okumura `992"] and further in view of Okumura et al. [USP 6,404,717; "Okumura `717"]for the reasons provided on page 6 of the above-referenced Office Action. Applicants respectfully traverse as discussed below.

As to claims 19/1, 19/3, 19/5, 20/13, and 20/15, each of these claims depends (directly or ultimately) from claim 1. Thus, each of claims 19/1, 19/3, 19/5, 20/13, and 20/15 are considered to be allowable at least because of the dependency from an allowed base claim. This shall not be construed, however, as an admission that claims 19/1, 19/3, 19/5, 20/13, and 20/15 are not separately patentable from the cited art.

It is respectfully submitted that claims 19/1, 19/3, 19/5, 20/13, and 20/15 are patentable over the cited reference(s) for the foregoing reasons.

The following additional remarks shall apply to each of the above.

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. *In re Fine*, 837 F. 2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F. 2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). As provided above, the references cited, alone or in combination, include no such teaching, suggestion or motivation.

Furthermore, a prior art reference can be combined or modified to reject claims as obvious as long as there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 19866). Additionally, it also has been held that if the

proposed modification or combination would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. Further, and as provided in MPEP-2143, the teaching or suggestion to make the claimed combination and the reasonable suggestion of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). As can be seen from the forgoing discussion regarding the disclosures of the cited reference(s) and AAPA, there is no reasonable expectation of success provided in the reference(s) and/or AAPA. Also, it is clear from the foregoing discussion that the modification suggested by the Examiner would change the principle of operation of AAPA as described in the subject application.

It is respectfully submitted that for the foregoing reasons, claims 1, 5, 7, 9, 11, 13, 15, 17, 19/1, 19/3, 19/5, 20/13, and 20/15 are patentable over the cited reference(s) and satisfy the requirements of 35 U.S.C. §103. Thus, these claims are allowable.

CLAIMS 2, 4, 6, 8, 10, 12, 14, 16, 18, 19/2, 19/4, 20/14 & 20/16

The above-referenced Office Action provides that claims 2, 4, 6, 8, 10, 12, 14, 16, 18, 19/2, 19/4, 20/14 and 20/16 would be allowable if the rejections under 35 U.S.C. §112, second paragraph as to claims 2, 8 and 14 were overcome.

As provided above, claims 8 and 14 were amended to resolve the Examiner's rejections under 35 U.S.C. §112, second paragraph. Accordingly, claims 2, 4, 6, 8, 10, 12, 14, 16, 18, 19/2, 19/4, 20/14 and 20/16 are considered to be in allowable form.

It is respectfully submitted that the subject application is in a condition for allowance. Early and favorable action is requested.

Applicants believe that additional fees are not required for consideration of the within Response. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed

for any excess fee paid, the Commissioner is hereby authorized and requested to charge Deposit Account No. **04-1105**.

Respectfully submitted,
Edwards Angell Palmer & Dodge, LLP

Date: July 18, 2008

By: / William J. Daley, Jr. /

William J. Daley, Jr.
(Reg. No. 35,487)
P.O. Box 55874
Boston, MA 02205
(617) 239-0100

Customer No. 21,874

684815BOS2